

Claim Amendments

1. (currently amended) A scheduler for a plurality of ~~packet storage devices FIFOs~~, the scheduler comprising:
 - a memory device ROM adapted to store a look-up table (LUT) that maps an input address to a LUT output, wherein:
 - the input address corresponds to current status of one or more of the ~~packet storage devices FIFOs~~; and
 - the LUT output identifies a next ~~packet storage device FIFO~~ to select for service and whether the next ~~packet storage device FIFO~~ has data available for service;
 - a latch adapted to store and forward the LUT output; and
 - ~~an extractor~~ a finite state machine (FSM) implemented using combinatorial feedback logic ~~and~~ adapted to receive the forwarded LUT output from the latch and to generate (1) a latch enable (LE) control signal that enables the latch to forward the LUT output and (2) a read enable (RE) control signal that identifies which one or more ~~packet storage devices FIFOs~~ are to be serviced.
2. (canceled)
3. (currently amended) The invention of claim 1, wherein the ~~extractor~~ FSM comprises an FSM having an IDLE state and an EXTRACT state, wherein:
 - when the FSM is in the IDLE state and a currently selected ~~packet storage device FIFO~~ has no data available for service, the ~~extractor~~ FSM sets the LE control signal to enable the latch to forward the LUT output; and
 - when the FSM is in the EXTRACT state and service of the currently selected ~~packet storage device FIFO~~ is completed, the ~~extractor~~ FSM sets the LE control signal to enable the latch to forward the LUT output.

4. (currently amended) The invention of claim 3, wherein:
when the FSM is in the IDLE state and at least one packet storage device FIFO has data available for service, the FSM transitions to the EXTRACT state; and
when the FSM is in the EXTRACT state and no packet storage device FIFO has data available for service, the FSM transitions to the IDLE state.
5. (currently amended) The invention of claim 1, wherein the current status of the one or more packet storage devices FIFOs comprises an indication of whether each packet storage device FIFO has data available for service and an indication of which packet storage device FIFO is currently selected for service.
6. (currently amended) The invention of claim 5, wherein a packet storage device FIFO has data available for service when the packet storage device FIFO currently stores more than a specified non-zero threshold number of data packets.
7. (currently amended) The invention of claim 1, wherein the extractor FSM is further adapted to receive service status information from the packet storage devices FIFOs.
8. (currently amended) The invention of claim 7, wherein the service status information comprises an indication of completion of service of the currently selected packet storage device FIFO.
9. (canceled)
10. (canceled)

11. (currently amended) A method for scheduling service for a plurality of packet storage devices FIFOs, the method comprising:

accessing a look-up table (LUT) stored in a ROM with an input address to retrieve a LUT output, wherein:

the input address corresponds to current status of one or more of the packet storage devices FIFOs; and

the LUT output identifies a next packet storage device FIFO to select for service and whether the packet storage device FIFO has data available for service;

storing and forwarding the LUT output based on a received latch enable (LE) control signal;

with a finite state machine (FSM) implemented using combinatorial feedback logic:

generating the LE control signal based on the forwarded LUT output; and

generating a read enable (RE) control signal that identifies which one or more of packet storage devices FIFOs are to be serviced, based on the forwarded LUT output.

12. (canceled)

13. (currently amended) The invention of claim 11, wherein the LE and RE control signals are generated using an FSM having an IDLE state and an EXTRACT state, wherein:

when the FSM is in the IDLE state and a currently packet storage device FIFO has no data available for service, the LE control signal is set to forward the LUT output; and

when the FSM is in the EXTRACT state and service of the currently selected packet storage device FIFO is completed, the LE control signal is set to forward the LUT output.

14. (currently amended) The invention of claim 13, wherein:
when the FSM is in the IDLE state and at least one ~~packet storage device~~
FIFO has data available for service, the FSM transitions to the EXTRACT state;
and
when the FSM is in the EXTRACT state and no ~~packet storage device~~
FIFO has data available for service, the FSM transitions to the IDLE state.
15. (currently amended) The invention of claim 11, wherein the current status of the one or more ~~packet storage devices~~ FIFOs comprises an indication of whether each ~~packet storage device~~ FIFO has data available for service and an indication of which ~~packet storage device~~ FIFO is currently selected for service.
16. (currently amended) The invention of claim 15, wherein a ~~packet storage device~~ FIFO has data available for service when the ~~packet storage device~~ FIFO currently stores more than a specified non-zero threshold number of data packets.
17. (currently amended) The invention of claim 11, wherein the LE and RE control signals are generated based on service status information from the ~~packet storage devices~~ FIFOs.
18. (currently amended) The invention of claim 17, wherein the service status information comprises an indication of completion of service of the currently selected ~~packet storage device~~ FIFO.

19-33. (canceled)